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MARKETING
THE EARLY-
POTATO
CROP



THE EARLY-POTATO CROP must be grown quickly, harvested promptly, and sold at once.

The special market problems are those of the truck grower rather than of the general farmer. A good return to the producer depends upon reaching the market early or when it is comparatively free from other potato supplies.

The crop requires special methods of handling, grading, packing, loading, transportation, and distribution. Everything must be done promptly and well, hence the need of the best and most competent business methods.

Markets for such crops change rapidly and they vary from season to season. The grower should keep in close touch with crop news, shipment reports, and market quotations.

The market season for any early potato district lasts only a few weeks. Into that short time must be condensed the net results of the season's work and planning.

This bulletin tells how the crop is sold in the leading early-potato sections; the location, shipping points, and relative importance of the heavy early shipping districts are shown; kind and source of information which the grower should use are described; and the grower told how to make the most of them in marketing his crop.

MARKETING THE EARLY-POTATO CROP.

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SELLING the early commercial potato crop is almost a business in itself. There are large districts in which early potatoes are the chief money product. The farmers depend on potatoes for their cash income; merchants sell fertilizer, tools, seed stock, and general supplies; and dealers trade in the product, and with the bankers, advance money to the growers. The railroads rely greatly on the freight from the outgoing shipments and the incoming supplies. Times are good or bad and money is plentiful or scarce in the district according to the returns received from early potatoes.

In the large cities there is a class of dealers and brokers whose spring and summer specialty is the sale of the early crop. Some of them handle a few later potatoes but have adopted the quick distribution methods necessary for the early crop. They have shippers who depend upon them for a prompt, reliable market outlet and customers who look to them for a sure source of supply of certain lines of early stock, year after year. The early potato arrivals are the leading feature at some city railroad freight yards during late spring and early summer. The railroads make special provisions for the supply of suitable cars and for quick transportation with prompt handling at the city end. Sometimes they list the growers and shippers at their various shipping points, with information on acreage planted, thus affording a guide to buyers.

EARLY-CROP REGION.

The border line between the early and late-crop sections can not be drawn exactly. Even the northern potato sections have an earlier crop consisting of quick-growing varieties planted in light soils and maturing a month or so in advance of the main crop. While these earlier crops of the North are sold chiefly in local markets, they meet some of the same problems as the early crops of the South. Strictly, the early crop includes all potatoes of the early varieties wherever grown, but commercially the early-crop regions are those

in which the greater part of market crop consists of early, quickly-growing varieties not usually held in storage for later use, but sold promptly.

In some northern sections like New Jersey, Long Island, southern Idaho, and even Minnesota and Maine, the early crop is of commercial importance and is shipped to distant markets, but in general the border line of the early-crop sections passes through northern New Jersey and Long Island and westward to Missouri and Kansas. In these border regions are sections both early and late, which not only ship heavily in late summer but often hold large crops for winter sale.

Early-potato districts are found in 18 States. In most seasons the early crop is the principal commercial feature in these States although several of them ship both early and main crops. The 18 States are Alabama, Arizona, Arkansas, Delaware, Florida, Georgia, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Jersey, North Carolina, Oklahoma, South Carolina, Texas, and Virginia.

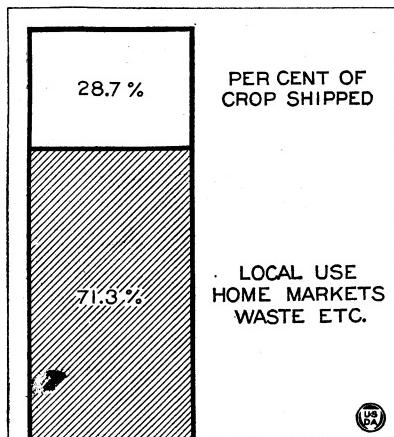


FIG. 1.—Disposal of the potato crop of the early-shipping States, five years, 1917-1921.

By no means are all the potatoes grown in the early-potato States shipped to distant markets. As shown in Figure 1, the early shipments average less than one-third of the estimated production of these States and are mainly from a few well-defined commercial areas indicated on the map in Figure 2. Later crops are grown rather generally throughout this region for home use and local markets. The relative importance of the early shipping States, as indicated by average carlot shipments, is shown in Figure 3. Figure 4 shows the average duration and volume of the movement from each section as the shipping season advances northward. In Figure 5 is shown the percentage and number of shipments of the crop of each State before September 1, which in most States would include practically all the early crop. The figures are based on average shipments from 1917 to 1921, inclusive.

Table 1 shows the main features of 10 important early-shipping areas in this group of States and the early districts of California and New York.

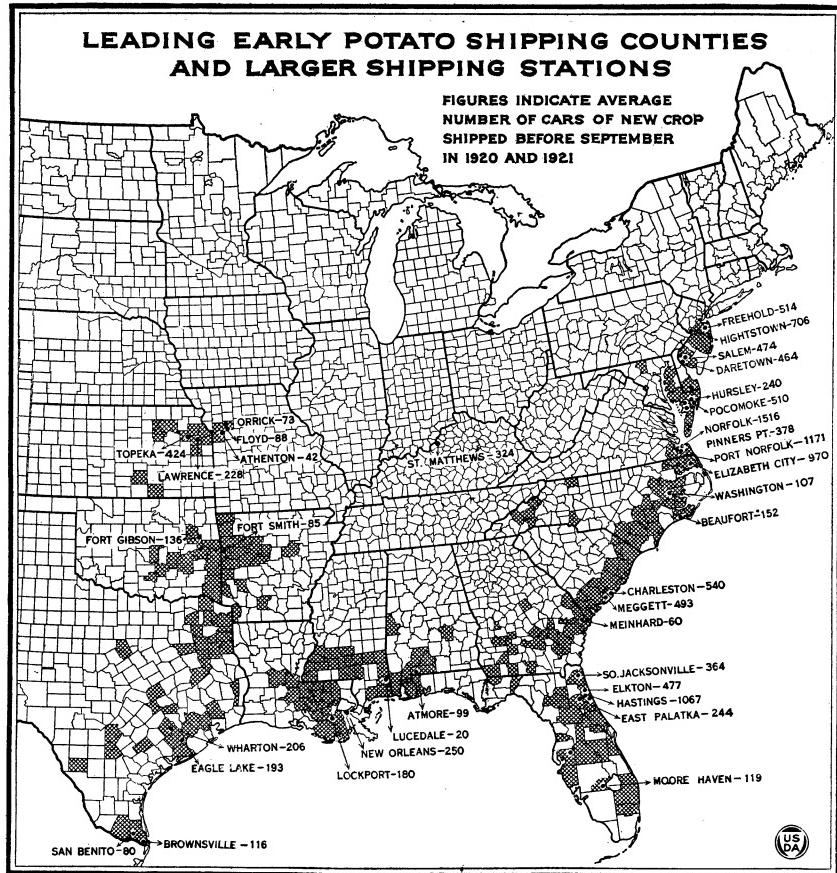


FIG. 2.—Bulk of early movement is from Gulf and Atlantic Coast regions.

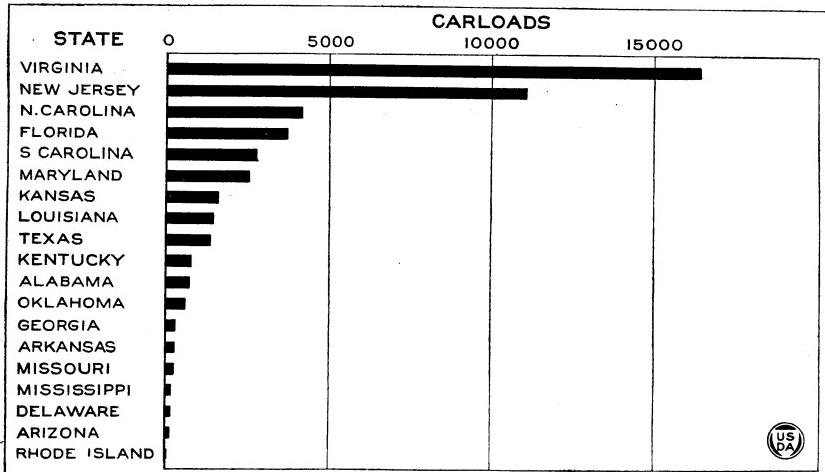


FIG. 3.—Comparative total movement from 19 early-shipping States. Five-year average, 1917-1921.

TABLE 1.—*Outline of prominent early-potato shipping districts.*

State or District.	Representative shipping center.	Season opens as early as—	Principal season closes—	Principal varieties.	Principal packages.	Principal consuming territory.
Florida.....	Hastings.....	Mar. 25	May 20	Spaulding Rose.	Double-headed barrels.	New York and other eastern markets.
Texas.....	Eagle Lake.....	Apr. 15	June 10	Bliss Triumph	100-pound sack	Chicago and Middle West.
South Carolina.	Meggett and Charleston.	May 1	June 15	Irish Cobbler..	Cloth top slat barrels.	New York and other eastern markets.
Louisiana.....	Alexandria, Lockport.	do.....	do.....	Bliss Triumph, Burbank.	90-120-pound sacks.	Chicago and Middle West.
North Carolina.	Washington, Elizabeth City.	May 15 June 1	do.....	Irish Cobbler..	Cloth top, slat, and stave barrels.	New York and other eastern markets.
California.....	Los Angeles....	May 15	Aug. 31	Burbank.....	116-120-pound sacks.	California and Western States.
Virginia.....	Norfolk, Onley.	May 25 June 1	do.....	Irish Cobbler..	Cloth top stave barrels.	East of Mississippi River.
Maryland.....	Pocomoke City.	June 15	do.....	do.....	do.....	New York and other eastern markets.
Kentucky.....	Louisville.....	June 25	Sept. 30	do.....	120-pound sack	Kentucky, Illinois, Indiana, and Ohio.
Kansas.....	Kansas City....	July 1	do.....	Early Ohio, Irish Cobbler.	do.....	Missouri and Middle West.
New Jersey (South).	Woodstown, Hammonton.	do.....	do.....	Irish Cobbler..	Bulk and 150-pound sack.	Pennsylvania, New York, New Jersey, Ohio.
Long Island, N. Y.	Riverhead....	July 15	do.....	Green Mountain, Irish Cobbler.	Bulk.....	New York City and eastern markets.

VARIETIES.

While the selling end of the potato question deals mainly with the crop when ready for market, it is well to bear in mind that success in marketing depends much on having the right stock at the right time. The variety should be one that is marketed in large quantities from the locality, thus making sure of carlot shipments throughout the season and of plenty of local cash buyers.

Potatoes from Bermuda were the original early stock. They happened to be a well-known, small, reddish sort, which was widely adopted by growers in the Southern States. This original stock has been replaced to some extent by pink varieties, like the Early Ohio and Spaulding Rose, or white kinds like the Irish Cobbler, considered more productive or better adapted to the locality or market. In the early-potato sections of the North, also, some of the old kinds are now so little grown for market that pure seed stock is hard to find. These changes were made slowly, and the new kinds were first tested cautiously.

New varieties or new crops should be grown only by those who can afford to lose something in the first trial, but who hope to learn year by year how to handle the variety or to start a new shipping center with the help of other producers. Changes in amount or kind are dangerous unless made slowly. Every season new shipping localities rise or fall according to the caution or rashness of the planters.

PLANNING AHEAD.

Planting begins in some early-potato sections about January 1, long before anyone knows just what the market will do with the remainder of the main crop. Growers must make their plans four months ahead of marketing time. The practical question is whether the main crop will be out of the way by the time the new crop is ready to take its place.

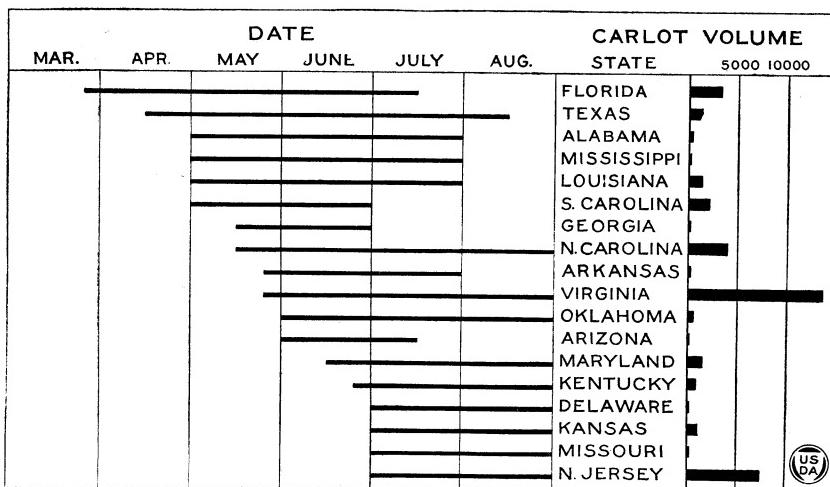


FIG. 4.—Early carlot movement from early-potato sections 1920-1921.

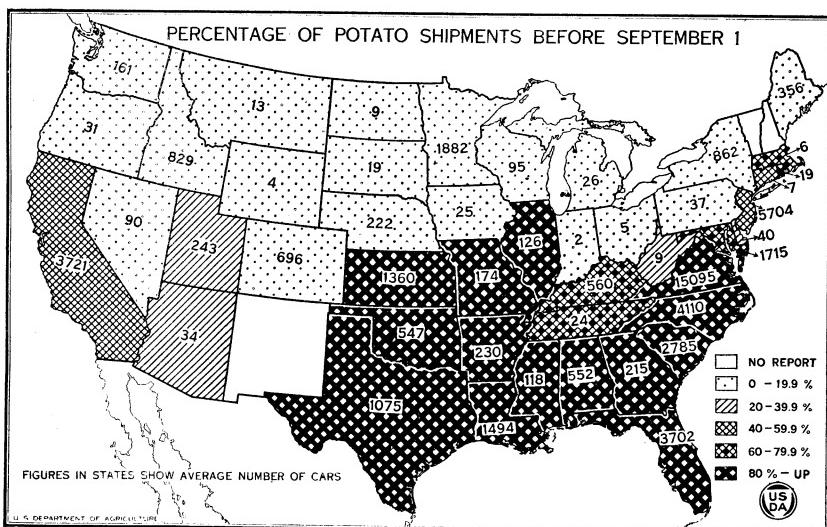


FIG. 5.—The Southeastern area supplies four-fifths of the early shipments.

The chief points that can be considered so early in the season are the size of the main crop, the amount shipped, the length of the shipping period, and the price tendency. Was the crop more than average or less, and was the shortage or surplus located in the consuming States or in the shipping regions? In general, when the figures

show that the estimated total main crop is well below average and much of the shortage is in the late-shipping States along the northern border of the country, the shipments will dwindle rapidly during the late winter and spring. In such seasons the price tends to advance as long as old stock continues in good condition. New stock tends to open at high prices and to remain rather high unless the supplies from competing early sections are very large and shipments increase too fast. If, on the other hand, the estimated main crop is well above the average, or if it is heavy in the late-shipping States, then a spring shortage of old potatoes is doubtful.

Table 2 shows to what extent prices of the early crop and the shipments have corresponded with the estimated crops for several recent years. The average price for early potatoes given in the table is a combination of the season's opening price of Florida stock and the closing price of Virginia stock as reported from several of the larger cities.

TABLE 2.—Correspondence of prices of the early crop with estimated crops for 1915–1922, inclusive.

Crop year.	Production—bushels.			Shipments—cars.			Old stocks per 100 pounds, Chicago, January.	Early potatoes, comparative price per barrel, sales to jobbers in the large city markets.
	All States.	Year.	Stock on hand Jan. 1. 35 States.	Leading early-crop States.	Old stock after Jan. 1.	Early stock, March to August.		
1915 ..	359,721,000	1916	84,433,000	62,430,000	.....	44,061	\$1.75	\$3.96 \$6.75
1916 ..	256,953,000	1917	54,860,000	80,297,000	35,043	44,010	2.96	6.33 11.50
1917 ..	442,108,000	1918	108,778,000	73,905,000	51,876	37,604	2.12	5.96 8.50
1918 ..	411,860,000	1919	93,258,000	63,206,000	58,240	29,813	1.91	8.28 12.00
1919 ..	322,867,000	1920	63,405,000	78,556,000	60,884	39,502	4.28	10.50 17.50
1920 ..	403,296,000	1921	90,023,000	61,203,000	61,498	43,564	1.30	6.50 11.25
1921 ..	361,659,000	1922	125,290,000	79,714,000	82,434	54,737	1.94	7.50 11.00
1922 ..	451,185,000	1923	.....	.....	.....	.....	.83	.....

THE PRICE OUTLOOK.

The price of early potatoes often seems to vary with the size of the main crop the year before and the quantity of old stock available for shipment after January 1, rather than according to the shipments of the new early crop. Thus the average price of new potatoes in 1917 was nearly double that of 1916, yet about the same number of carloads of new early stock were shipped in each of the two years. But the 1917 new crop followed a short old crop of which the shipments were light after January, while the 1916 new crop followed a heavy main crop.

In 1918 and 1920 the volume of early-potato shipments was about the same each year, but prices were decidedly higher in 1920. The preceding main crop, that of 1919, was not so large as that of 1917. The main crop of 1919 was heavy in some late shipping States, as shown by the heavy shipments of old potatoes after January 1. Hence the report of stock on hand January 1 is, to some extent, a revision of the crop reports and should be noted in detail as well as the estimate of the main crop. The effect of a large winter supply of old potatoes is shown not only in the heavy carlot supplies following but also in the poor demand because of the local small-lot supplies near the towns and cities.

Again in 1920 and 1921 there were nearly equal shipments of new potatoes each year, and the far lower prices of 1921 must be explained in part by the heavy main crop of the preceding year. In the seasons 1917 to 1921, inclusive, the war-time inflation and the general price slump following greatly affected the price action, but did not control, except perhaps in 1919, when the average price of new potatoes was high, notwithstanding the comparatively large main crop of 1918. Here again the moderate volume of old stock moving after January 1, 1919, indicated that the surplus of the crop was not very large in the late-shipping States. It may be concluded that while the size of the estimated main crop is often a good indication of the outlook for the following early-potato market, yet the stock on hand January 1 also should be taken into account; likewise any special conditions that might affect the natural course of the markets.

The official estimate of marketable potato stocks on hand, issued usually toward the end of January and sometimes revised in March, makes it possible to judge of the probable supplies of old stock. According to the six-year average record used, about two-fifths of the January 1 stock goes to market in carlots after that date, the rest being used locally or disposed of in other ways.

FORECAST FROM MIDWINTER PRICE.

The price of old potatoes in January is often a general forecast of the prices of the following new early crop. The January price in itself expresses the condensed opinion of buyers and sellers regarding the stock on hand, the supply, and the demand. During the seven years, 1916-1922, the opening price of Florida potatoes was usually three to four times the average January price of old stock per 100 pounds in the Chicago carlot market. Except in 1919, the high or low opening price of new potatoes was foreshadowed by comparatively high or low January prices of old stock. As the opening price sometimes indicates rather closely whether it is to be a season of high or low prices, it may be fairly stated that the prevailing January price of old potatoes is worth taking into account when planning for the early crop.

In two of the seven recent seasons considered in the table, all of the indications were strongly favorable to producers. In 1917, the preceding main crop had been very short. The January stock on hand was light and the price very high. Business conditions also were active. In 1920, the indications were again favorable in all these respects. In either year, the early planter may be said to have received the "go ahead" sign. In the years 1918 and 1921 conditions pointed strongly the other way, indicating the desirability of light planting. For the other three years of the series, 1916, 1919, and 1922, the indications were not very strongly marked in either direction. Of these years, 1916 was one of prevailing low prices, 1919 was high partly on account of war-time inflation, and 1922 was a season of medium prices. The conclusion is that the planter may safely increase his usual acreage only when all indications are plainly in favor of a strong market. When the signs are mixed or doubtful, the usual acreage should be planted.

WATCH THE OTHER POTATO CROPS.

The early crop usually sells high if the old crop is out of the way in time. Therefore, the grower in the early sections should study the market or crop situation carefully and plant according to the probable supply of old potatoes in the spring and early summer, as indicated by reports of northern production, shipments, stock on hand, and prices. In a general way a short main crop means a good demand for early potatoes and high prices unless the early crop is very large.

The early planter in Florida, Texas, or California should plant heavily or lightly according to the probable supply indicated by size of main crop and reported stocks on hand. As a matter of fact, many farmers plant according to the market success of their own crop the season before and often come forward with a large crop when the northern markets are full of cheap old stock. Especially risky is the common tendency of new growers to plant heavily in the years following a season of high prices. There is always a possibility that prices will be high several years in succession, but more often high prices are followed the next season by large supplies and small returns to the growers. Plans should be based not only on the past but on the probable future.

The grower must watch crop conditions in the districts which may compete with his own. Light planting or crop damage in earlier competing sections means greater demand for his own crop. On the other hand, large acreage and favorable weather in earlier sections point to caution in planting and perhaps to delay in harvesting until the high point of competing shipments has been passed. In the first case the crop may be dug when still a little green because of high prices to be had for early shipments. Extremely early shipment, however, seldom pays because of the lighter yield and the greater danger of loss by heat and bruising. Plainly, competing shipments must be watched not less than the total crop in order to enter the markets at the right time.

A SAMPLE SEASON.

In the season of 1920-21, for example, the grower in the far South might have noted in the official December crop reports that the yield was far above the average and the crop rather large in most of the States that ship heavily during the last part of the main-crop market season. He could have found that the shipments reported for the early months of the season, October to December, were not large in proportion to the crop, showing that heavy stocks would come upon the market later. Accordingly, if wise, he would plant lightly.

The potato grower in the sections from Virginia and the Carolinas westward could follow a similar course, especially on noting the report of oversupply in northern markets and the ample stocks on hand January 1. Sections north of Norfolk, Va., including the Virginia-Maryland Eastern Shore and southern New Jersey, the early sections of Minnesota and northern Idaho, and the Kaw Valley, none of which does much planting before March 1, would take into account not only the old main crop but also the acreage

and the condition of the crops in earlier competing sections and their probable earliness or lateness.

The official report of the United States Department of Agriculture published early in April showed a decrease from 1920 of about 30,000 acres planted in nine early States, including about 10,000 acres decrease in Virginia, which is the most important second-early shipping section. The season was early for all crops, and the new potato crop would naturally enter the markets earlier than usual. This would leave an opening for the crop of New Jersey and other intermediate sections and for the planting of early varieties in the States farther north.

These conclusions worked out rather well. Early potatoes sold comparatively low in relation to cost of production, but no doubt would have been still lower had not the early acreage been reduced. The Northern early crop found a potato market only moderately supplied in August and September and sold at prices fairly satisfactory to growers, although yield was below the average.

In the 1921-22 season conditions were different in some ways. The main crop was short, as shown in the December official report, but production was large in several of the latest shipping States, which always ship heavily in proportion to yield. Shipments were unexpectedly heavy from some of the newer potato sections in the Northwest, especially from the Dakotas. Indications for the early planter were somewhat doubtful, and suggested only a moderate acreage. The large stock of old potatoes on hand January 1, followed by heavy shipments and declining prices, also suggested caution to late February planters. However, the crop was heavy in Florida and early shipments found a good market, partly because of the freezes in southern Texas, which is Florida's most important early competing section. Reports of increased acreage in most of the very early shipping sections, together with continued liberal supplies in Northern markets, suggested caution in the intermediate potato region.

The intermediate sections forecasted production somewhat larger than in 1921, but with little increase in New Jersey and a decrease in Virginia. This suggested that there might again be a good market for early potatoes in June, July, and August. Reports of slowly improving business conditions were also encouraging as indicating an increase of buying power on the part of the consuming public. Heavy planting of the main crop and a July 1 forecast of total crop far above the five-year average gave early indication of a coming season of liberal main-crop production.

LOOKING OVER THE MARKETS.

The selection of markets depends upon conditions of demand, supply, and price, which change continually. The shipper must learn these conditions by reading the market reports from day to day. On the whole, however, prices do not often vary greatly between principal city markets when the difference of 5 to 15 cents per 100 pounds in freight charge is taken into consideration. During seasons of prosperity, prices have ranged higher in Pittsburgh than in New York and Philadelphia. New York prices sometimes have ranged higher than Philadelphia, although freight rates are nearly the same. Early

shipments have sometimes reached highest prices in the Boston market. Chicago has often quoted high prices for Eastern potatoes when there has been a shortage of supplies from the South Central early shipping sections. There are certain conditions which prevail year after year. Table 3 shows some of these more lasting conditions—the quantity, varieties, and sources of the early-potato supply in a number of the large markets. The condensed description should aid the shipper in selecting the natural market outlet for his carlot sales.

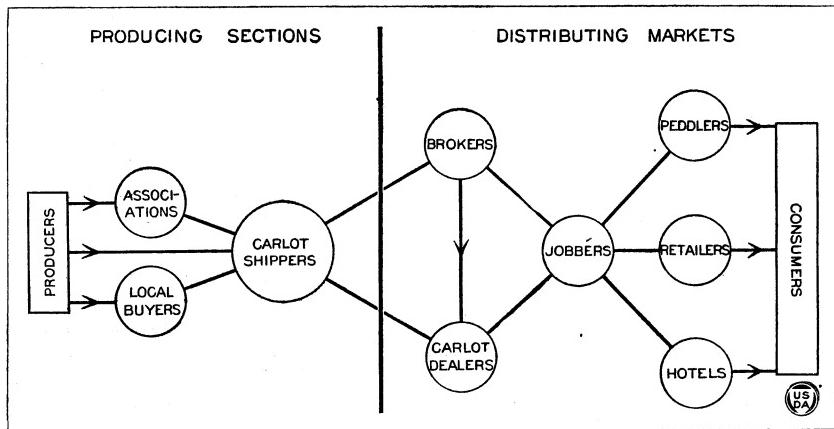


FIG. 6.—Usual market route of early-potato shipments.

TABLE 3.—*Early-potato supplies of 18 cities.*

City.	Annual carlot early-potato unloads, 5-year averages.	Origin of carlot early supply.	Per cent of yearly supply from early shipping sections.	Leading varieties early carlot receipts.
Baltimore.....	11,008	Florida, North Carolina, Virginia.....	40.5	Spaulding Rose, Cobbler.
Boston.....	11,777	Carolinas, Virginia, New Jersey.....	20.2	Do.
Buffalo.....	11,306	Florida, Virginia, New Jersey.....	55.3	Do.
Chicago.....	2,801	Florida, Texas, Louisiana, Virginia, New Jersey.	23.9	Do.
Cincinnati.....	645	Florida, North Carolina, Alabama, Virginia, New Jersey.	31.6	Triumph, Ohio, Spaulding Rose.
Cleveland.....	11,344	Florida, South Carolina, Virginia.....	42.9	Cobbler, Bliss Triumph.
Columbus.....	1,245	Florida, Virginia.....	30.2	Cobbler, Spaulding Rose.
Detroit.....	1,037	Florida, Virginia, New Jersey.....	41.3	Do.
Indianapolis.....	1,423	Virginia, Kentucky.....	26.0	Cobbler.
Kansas City.....	482	Texas, Louisiana, Oklahoma.....	19.97	Bliss Triumph, Early Ohio.
Minneapolis.....	66	Texas, Oklahoma.....	7.6	Bliss Triumph, Spaulding Rose.
New York.....	8,589	Bermuda, Florida, Carolinas, Virginia, New Jersey.	45.9	Cobbler.
Omaha.....	1103	Texas, Kansas.....	9.9	Early Ohio.
Philadelphia.....	3,375	Florida, Carolinas, Virginia, New Jersey.	47.4	Spaulding Rose, Cobbler.
Pittsburgh.....	2,466	Florida, North Carolina, Virginia, New Jersey.	41.1	Do.
St. Louis.....	439	Texas, Louisiana.....	15.1	Bliss Triumph, Long White.
St. Paul.....	35	Texas, Oklahoma.....	10.2	Bliss Triumph, Spaulding Rose.
Washington.....	1,544	Florida, Carolinas, Virginia.....	53.8	Spaulding Rose, Cobbler.

¹ Less than 5 years. Boston figures include carlot reshipments.

MARKET INFORMATION.

Market news of country-wide scope is provided by the United States Department of Agriculture. Prices on sales of large quantities in leading markets, and country prices as reported by its representatives in shipping sections, are quoted daily. During the most active shipping season these reports are issued from branch offices in New York, Boston, Philadelphia, Baltimore, Washington, Pittsburgh, Cincinnati, Chicago, St. Louis, Kansas City, Los Angeles, and Minneapolis, and are mailed daily to thousands of potato shippers. Daily reports are also issued from several temporary field stations in large early-potato shipping districts, and are therefore within reach of most shippers. Facts regarding drought, storms, and freezes appear in the next official figures showing crop conditions or probable yield. Semimonthly crop notes issued by the Bureau of Agricultural Economics describe condition and progress of the crops in producing sections.

Weather, Crops and Markets, a weekly publication of the Department of Agriculture at Washington, includes much crop and market information of importance to growers and may be obtained at the subscription price of \$1 a year, from the Superintendent of Documents, Washington, D. C.

Newspaper accounts are often unsafe guides because the early reports of drought, storms, freezes, and damage to crops are often far from accurate. Usually the real situation can be arrived at only after some time by comparing numerous local reports.

A weekly review of market prices and conditions, issued Tuesday of each week, is available for free distribution from Washington or from the nearest market station. Brief summaries of market conditions are sent out daily from various points by means of wireless telegraph and telephone. Many local newspapers feature these various reports.

Various crop and market reports are issued by State departments of agriculture. Farm papers and produce-trade papers contribute additional crop and market news. Some county farm bureaus aid directly in potato marketing. The official reports of various kinds may be obtained free on application and should be kept in handy form where they can be used promptly for making plans for the crop and its sale.

Market information about the early crop is sent out from field stations of the Department of Agriculture at such central shipping points as Hastings, Fla., in April, and Charleston, S. C., Washington, N. C., and Elizabeth City, N. C., in May and June. Shipping-point news of the Eastern Shore of Maryland and Virginia and of southern New Jersey is issued from the Philadelphia market station and news of the Kaw Valley crop is sent out from the market station at Kansas City.

Among the publications of special interest to commercial potato growers are Farmers' Bulletin No. 753, Commercial Handling, Grading, and Marketing of Potatoes, and Farmers' Bulletin No. 1050, Handling and Loading Southern Potatoes.

Many of the railroad companies have an agricultural department which helps shippers in finding their market by publishing a list of buyers and shippers with the acreage and the amount of stock

expected to be bought or sold. The local railway agent should be notified well in advance when the empty cars are to be needed for the movement of the crop.

The grower will also need the services of successful and reliable dealers. Information regarding the business standing and reliability of dealers usually can be obtained at the local banks and from various commercial directories. The dealer himself is often asked and should be willing to supply references as to his own financial position and reliability.¹

FOR LOCAL MARKETS.

Although the early potato is chiefly a money crop, it is not all shipped to the great market centers. Growers living near towns and cities often find a convenient cash market for limited quantities. The grower of less than a carload (about 500 bushels) can not ship at carlot rates. In many northern and intermediate districts the



FIG. 7.—Bushel baskets are often used in local markets.

early crop surplus is sold in small lots in markets within teaming and trucking distance. The buyers are grocery and provision stores, hotels, boarding houses, and families.

The requirements of this local trade in small lots are usually less exacting than for sales in distant large markets. The consumer cares less about the grading of his first lot of new potatoes than he does when storing his winter supply. The local trade demands chiefly that early potatoes be clean and of fair, usable size. The smallest must be picked out of the market grade, but can be sold at about half price to some restaurants and lunch stands, or even to family trade willing to buy small potatoes cheap.

¹ The National League of Commission Merchants of the United States, with headquarters in the Munsey Building, Washington, D. C., is composed of some 650 produce dealers located mainly in the large market centers east of the Missouri River. It has requirements for membership as to financial standing, conduct, and personal integrity as well as a system of arbitration for the adjustment of disputes.

In the early local trade almost any variety can be sold. Sometimes a pink kind will sell better to certain classes of trade and sometimes the white varieties are asked for, but the color prejudice regarding the early supply is seldom strong in such markets. Earliness is of first importance. The small markets often have no early supplies shipped in from a distance, and the demand for the first new potatoes is keen for a short time. Then the price drops to about the usual range for the late crop, and gradually merges into the late market as the main crop varieties become abundant.

To dig at the most profitable time, in accord with these market conditions, requires judgment and experience. Beyond a certain point, the larger yield obtained at full ripeness will more than offset a somewhat lower price prevailing at that time.

Producers for local markets seldom use much machinery in harvesting. The potatoes grown on small farms for local market are dug with hooks or forks, throwing two or more rows in one furrow. The digging should be done in a dry time when the potatoes will shake out free of soil. For nearby marketing, the standard package is the box, which should be the regular market size and shape common in the vicinity. With the aid of wagon racks made for the purpose, the full boxes or baskets may be piled high on the wagon or truck without bruising the potatoes. High loads should be roped on firmly.

Sales in quantity can be made to army posts and naval stations according to conditions which vary from time to time, but which may be learned by addressing the Office of the Quartermaster General, and the Navy Bureau of Supplies and Accounts, at Washington, D. C. Army and Navy supplies are subject to official inspection. The grade, weight, and condition must be strictly up to requirements. Defective potatoes will be thrown out and deductions made for any shortage in weight.

FOR DISTANT MARKETS.

Most of the very early commercial crop is grown in rather thinly populated regions and must be shipped to distant consuming markets. When cash buyers are scarce or not satisfactory the crop may be offered to city dealers known to handle early potatoes. The shipper should find out about the firm long before the crop is ready and he should write to the dealer as soon as he can describe the probable quality, amount, and time of shipment of his crop. Many letters to dealers are too general in their description. A very large buyer must know how many carlots he can get at the shipping point, when they will be ready for shipment, what varieties, and whether graded or not. With such facts at hand, the dealer may be willing to look over the situation. Even if the shipment is to be sent forward for selling on commission, a description should be sent to the commission dealer so that he can arrange for its sale before it arrives.

The shipper may offer the potatoes to the dealer at a definite price. If he does, and the dealer accepts, it is a legal transaction whichever way the market goes, but if the shipper's offer is made "subject to confirmation" he need not sell unless he writes or telegraphs acceptance or a confirmation. If the car is to be handled by a broker, the same kind of notice should be sent to him. If the grower wishes to reserve the final word regarding a sale, he should add to the broker's letter, "Sale subject to confirmation;" then the broker will report

the offered price before concluding the sale. Copies of letters and telegrams should be kept by the shipper for reference as needed. Shippers experienced in loading carlots seldom have disputes with dealers of high standing.

The shipper should supervise closely the grading, the packing, and the loading of the car. Poor work by helpers at shipping points is often the cause of trouble at the receiving end.



FIG. 8.—Much loss occurs from breakage of weak packages.

PACKAGES.

Packages should be on hand well in advance of the shipping season. While the double-headed barrel seems the best package, other containers cost less and are still used extensively. The cloth-topped barrel is the leading kind in the const sections north of the Carolinas. The top of cloth or bagging is fastened by driving down over it the top hoop of the barrel and nailing through the hoop and cover.

As the staves have little support at the top, these barrels are not as strong as the double-headed barrel and there is less protection to the contents both at the sides and top. The cloth-top barrel breaks down easily. Still more so, the slat barrel, which is a rather flimsy affair. The slatted type used largely in the Beaufort section has an inside hoop that adds strength but is likely to cause bruises to the contents. Sacks are still used in the South Central States and more or less in other sections, notwithstanding the injury often caused to the contents. The 150-pound sack is used according to convenience and because some markets are accustomed to it. The 100-pound size, used for the western main crop, is easier to handle and if properly loaded in the car the contents are less likely to heat.

Hampers are often used for the very early shipments from southern Florida and Texas. These are sometimes shipped in small lots by express and travel fairly well because handled more carefully than freight shipments. The first arrivals sell at such high prices that buyers often prefer the small package. For the later shipments in car lots by freight the hamper is not satisfactory because of loss by breakage and sometimes by theft. The hamper is also much used for short-distance marketing by truck or wagon. For this purpose it has the advantage of cheapness and convenience.



FIG. 9.—Field sorting of southern potatoes over a machine into three sizes.

GRADING.

Grading is a kind of market insurance upon which bargaining may be based, contracts made, disputes avoided, and losses adjusted. It protects shippers and buyers by supplying a standard of quality and a basis on which disputes and heavy losses may be avoided. It does much to reduce the difference between the price paid to the grower and the price received by the dealer.

To be of value, grades should be permanent. Individual grades are subject to change at any time. They should be uniform if sales are made in large markets. Hence the value of official grades should be emphasized.

In some of the early shipping regions, as in Texas, for example, grades have been established by State law and shipping-point inspection made available. The inspector is paid a fixed price by the shipper for each certificate of inspection. Many shipping organizations, like those in Virginia and Maryland, have their own grades and hire their own inspectors to make sure that the shipments will be up to standard.

ICED CARS.

In the southern sections, where the barrel container is used, most shipments are made in ventilated cars. California and several other main-crop States, which market also an early crop, find it necessary to ship under refrigeration. Excellent results are secured in this way, but the extension of the practice has been checked by the cost and the difficulty in many sections in securing refrigeration service.

INSPECTION.

There is still the possibility that the buyer will reject the shipment on arrival as not being up to grade or being out of condition. If there is trouble of this sort the shipper may arrange to have the carlot officially inspected by the Federal food products inspector. These inspectors are located in the principal market centers and will travel reasonable distances to inspect on request, on payment of a fee of \$4 per car and expenses. The carload may be inspected when placed on the team track at the city railroad yard. This is privately done, as a matter of course, by the dealer's customers. An official inspection may be made by the Federal inspection service upon request by the shipper, dealer, or railroad company, and is usually made in case of doubt raised regarding quantity, grade, or condition. All bills of lading should read "Permit inspection."

The cost of official inspection is a small item but it helps to insure against unfair rejection of the car. The inspector's report, a copy of which goes to the shipper, makes a fair basis for allowance in case the carlot is really defective or if damages are to be claimed from the railroad for undue delay or lack of care in handling the shipment. If the damage was caused during transit, the buyer may accept the car under protest and enter a claim for damages in behalf of the shipper.

Official inspection service at country shipping points has been established in some States. This service has been rendered to some extent by the United States Department of Agriculture and will assure more complete protection to shippers and receivers.

GET ACQUAINTED.

A personal visit to the principal markets during the active season will do much to make clear the market requirements and conditions. The shipper becomes acquainted with his dealer, learns his point of view, his methods, and his difficulties. He has an opportunity to explain his own problems and to begin an acquaintance which may do much to smooth the way in further business dealings. The grower can hardly realize all the little points that go to make up a good

marketable product until he sees the best goods, compares them with those selling for less, and has the salesmen explain the difference.

Once a satisfactory dealer has been secured the shipper should strive to hold his confidence just as hard as the dealer tries to please him. It is a pleasant state of affairs when the shipper praises the selling ability of the dealer and the dealer commends the shipper and makes special effort to hold his business from season to season. The dealer looks for the consignment year after year and his customers begin to ask for the goods, while the shipper takes pride in producing and putting up a product that will meet expectations. The haphazard or occasional shipper who tries a new dealer for every shipment hardly can expect to build up a market standing of this kind.

MISTAKES OF EARLY SHIPPERS.

There is much cut, bruised, and sunburned stock. The skin is the weak feature of the early potato. Part of the trouble arises from careless digging and rough handling. A break in the skin is the open door for rot.

Packages broken on the way cause trouble. The double-head barrel is good protection, and the cloth top fair protection. In some markets there is more or less comment against the double-head barrel used for southern potatoes, on the ground that it promotes decay by checking ventilation; otherwise it is considered by far the most successful package. The trade as a rule is not used to crates and does not buy them readily at full prices. In short, the use of anything but the standard packages used in the section for the same kind of stock must be considered a mistake. Southern potatoes in bushel crates have sold in some markets at 25 cents below stock in barrels—sometimes 75 cents to \$1 below barrels—for the same quality and grade of stock. Crates are not so strong as stave barrels and need more careful loading and handling.

Another mistake is the use of old or weak packages. Barrels of thin wood or of slats do not hold up well in carlot shipments for long distances. Old barrels that have held other material may sift powder and dust of various colors and flavors upon the potatoes, affecting their selling quality.

Too many barrels are slack filled. One reason for the popularity of well-known brands is the certainty of getting 11 pecks of marketable potatoes from every barrel. This means shaking down several times while filling and the use of a barrel header. A loosely packed barrel may seem full at first, but settles during the journey.

Loose packing in loading cars is a common fault. Surplus space at the center of the car must be taken up by bracing. Barrels should be loaded on the ends, not on the sides, and long strips of wood should be put on top of them across the row before stacking the second tier of barrels on top of the first. Poor ventilation is common, especially when sacks are used. The load should not be jammed against the car doors, but should be held away by slats nailed across on the door posts. In Farmers' Bulletin No. 1050 are described and illustrated in detail the methods of loading cars with either barrels or bags.

The shipper sometimes fails to send the city dealer a notice stating the number of the car, how many and what kind of packages of each grade and variety are shipped, and by what railroad and route. The bill of lading should be inclosed with the notice. A short, clear statement of the facts needed will get best results.

Disputes concerning the quality of the shipment usually refer to undersize, mixture of No. 1 and No. 2 grades, scab, rot, sunburn or heating, and cuts or bruises. When such defects are serious the shipper must expect to lose the potatoes sorted out, besides the cost of the freight and the labor of handling the culs.

WHAT THE INSPECTORS FIND.

Inspectors in the Federal service at market centers state that many early potatoes are not well graded and include many defects that cause trouble at the receiving end. Some of these defects are illustrated in Figure 10. It is true that the dealers and consumers will

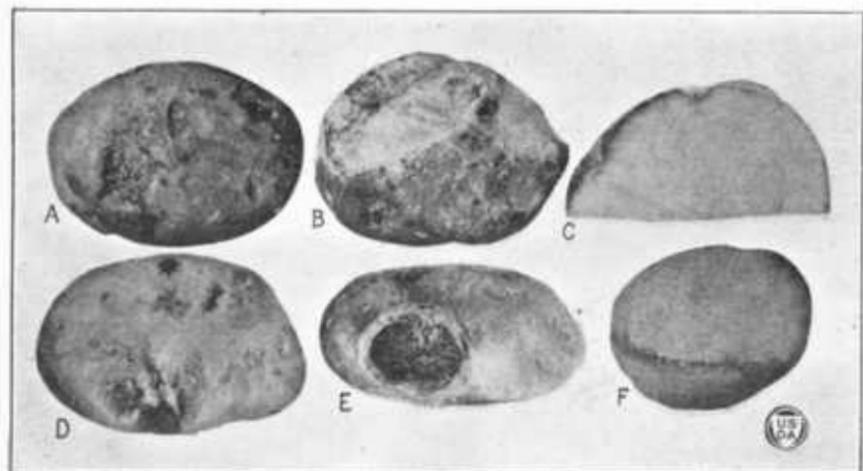


FIG. 10.—Common defects in early potatoes.

- | | |
|--------------------|-----------------|
| A. Slimy soft rot. | D. Scab. |
| B. Cuts and decay. | E. Grub injury. |
| C. Sunburn. | F. Bad cuts. |

often accept more small-sized potatoes and will tolerate various little defects that would not pass in the main crop. When new potatoes are in light supply receivers may accept a car not strictly up to grade because it can be sold at a profit. But when arrivals are liberal and there is plenty of well-graded stock on the market the buyer becomes more particular and perhaps rejects potatoes from the same field from which the earlier shipments came, put up in the same way, and of the same general character. As the shipper can not determine in advance the condition of the market when his shipment may arrive, the only safe plan is to ship carlots that are strictly up to grade.

Some whole sections have been conspicuous for shipments of ungraded or poorly graded stock loaded just about as it comes from the field. In seasons of heavy production such sections find their crop hard to sell. The remedy is for the growers in such districts to get together and put up potatoes according to a common standard.

Much early stock is covered with mud and dirt, the result of digging the potatoes during a wet time. Some of the mud comes off during shipment and causes shrinkage in weight. The rest stays on and affects the appearance and market value.

The most serious loss resulting from marketing muddy potatoes, however, is slimy soft rot. The handbook used by the official inspectors says of this decay:

In wet soil the bacteria may enter the potato through scab wounds, through the breathing pores of the tuber, or through broken places in the skin.

If infected potatoes are dug while wet and scalded by exposure to the hot sun, or if sacked with wet soil adhering, a procedure which may lead to heating or sweating, the rot may progress rapidly from the surface inward throughout the whole tuber.

Control measures are: Careful sorting of stock which has been subjected to unfavorable conditions before it is put into transit or storage, and improvement of handling methods to avoid wounds and scald.

This rot progresses very rapidly in transit and storage, but can be checked by rapid drying of affected stock.

Sun scald is a serious defect resulting from exposure of the newly dug tuber to the direct rays of the sun for too long a period. This should not be confused with potatoes which have been turned green by long exposure to light. This condition is properly termed sunburn. The vegetable disease handbook describes scald as follows:

Scald on potatoes may appear just as large blisters which soon become sharply depressed or as slightly bleached areas with a very irregular and lobed margin of a darker metallic color. Upon cutting such a tuber, it is found that a shallow surface layer of tissue has been killed. This killed tissue is a dull gray in color and is separated from the uninjured tissue by a brown and very irregular line.

Scald is of the highest importance from the market point of view. The killed tissue is very subject to the attacks of rot-producing organisms such as Fusarium and especially the bacteria of slimy soft rot. In the Chicago market in the summer of 1918 there were enormous losses due to slimy soft rot following scald in shipments of potatoes from the South and the entire Mississippi Valley.

Scab is one of the most common blemishes of early southern potatoes. It is useless to try to build up the reputation of the brand unless noticeably scabby stock is kept out of the pack. Damage by wireworm is also common in various sections in some seasons.

OBJECT LESSONS IN MARKETING THE COMMERCIAL CROP.

Methods of handling and distribution are likely to be at their best in the leading shipping sections, where large groups of shippers (under stress of the busy market season year after year) have gradually settled upon methods found well suited to the conditions. A part of their growth and success is based on a steady building up of facilities which gives them an advantage of one kind or another in the markets. The large volume of business to be done in the short time and the rivalry of competing firms naturally lead to methods that will save in labor and in cost and bring the best returns. The growers and dealers near small shipping points or in new sections may profitably note the methods used at leading shipping points. Often one shipping center may obtain helpful hints from the practices in others. For this purpose several descriptions by field representatives of the Department of Agriculture follow, giving in brief the story of the early crop as handled at leading centers of production and shipment, but including

also a few shipping sections in which systematic marketing has not been fully developed.

Among the largest and most fully developed shipping sections are those along the Atlantic seaboard such as Hastings, Fla., the Beaufort and Charleston sections in South Carolina, the Norfolk and Eastern Shore sections of Virginia, the Eastern Shore of Maryland, and southern New Jersey. Important sections farther west are the Eagle Lake district of Texas, the Arkansas Valley of Oklahoma and Arkansas, and the Kaw Valley of Kansas.

HASTINGS, FLA., THE FIRST OF THE EARLY-POTATO SECTIONS.

The first of the important early potato-shipping sections is the Hastings district in northeastern Florida. This includes part of St. Johns, Putnam, and Flagler Counties. Including the boat shipments from points on the St. Johns River, the annual movement of potatoes



FIG. 11.—Harvesting potatoes in the section of Hastings, Fla.

from this territory is 1,500 to 3,000 cars. The market movement occurs chiefly between April 1 and May 15. Spaulding Rose is the chief variety raised. Because this is an early potato and because shipments from Florida usually are sent to market as soon as the crop can be harvested, it is not surprising that many of the potatoes are immature and need careful handling.

The principal container used is the double-headed barrel. Occasionally, cloth-top barrels and, in times of barrel shortage, sacks containing 150 pounds have been tried.

The potatoes are picked into field crates or other containers and hauled direct to the sizing machine. The better growers instruct their pickers to leave defective or diseased potatoes in the field. The

machine may be set up in the field or be placed under some shed. The smaller machine for growers with a comparatively small acreage is operated by hand. Power to drive the larger machines is supplied by gasoline engines or electric motors. The potatoes are emptied from field crates on the apron or receiving bin of the machine, from which they are carried to the first belt. This top belt of $1\frac{3}{8}$ inches mesh carries all the potatoes of No. 1 size up the machine over the end of the belt where they drop through the chute into the barrels for the first grade. The No. 2 and smaller potatoes drop through the $1\frac{1}{16}$ -inch mesh on a second belt of $1\frac{1}{2}$ -inch mesh. Here the No. 2 grade are carried up the machine and dropped through a chute at one side into a barrel. When the market will warrant shipping the No. 3 grade, a third chain or belt is used, and potatoes which do not drop through its $1\frac{1}{4}$ -inch mesh are carried to the chute on the opposite side. Considerable bruising may be avoided by providing an apron to break the fall as the potatoes are dropped into the barrel.



FIG. 12.—The use of a barrel header makes a tight, safe pack.

The machine sizers are usually called graders, but this is only partially true, for no machine removes diseased or defective potatoes. When properly run, it will size potatoes better than the human eye. Manufacturers of these sizers are now providing a sorting belt in addition to the sizing screen. This gives an opportunity to remove the cut, bruised, misshapen, and diseased potatoes overlooked by the field pickers.

Most of the potato shipments from Florida go by rail. Stock grown at points on the St. Johns River is carried by boat to Jacksonville and then is transferred either to cars or to coastwise steamers. From one-half to two-thirds of all potatoes from this section are billed from the Hastings station. Because of the distance to the consuming markets, at least one-third of all the cars are billed to prominent diversion points, such as Waycross, Ga.; Potomac Yards, Va.; or Cincinnati, Ohio. This gives shippers an opportunity to change the destination in transit and to reach markets that have

advanced since the cars rolled from Florida. New York, Philadelphia, Pittsburgh, Chicago, Baltimore, and Washington are among the leading cities receiving Florida potatoes in large quantities. Cincinnati, Cleveland, and Detroit also take heavy shipments. Nearly all big markets east of the Mississippi River use a few carloads of Florida potatoes.

Potato raising is the main source of farm income in this section of Florida. The acreage and distribution have increased rapidly. Hastings is a busy town during the months of April and May. Buyers throng the place. Local operators work their forces to the limit. It is necessary to harvest, grade, pack, and ship an average of 75 cars of potatoes a day during the brief season, as of course, no commercial stocks of southern or early potatoes can be held in storage.

Although there are many independent buyers on the ground when the shipping season opens, the deal is largely controlled by prominent commission houses which assist in financing the farmers. Contracts are made that require a large part of the crop to be sold through these houses on commission, the usual rate being 5 to 10 per cent. These firms maintain local offices at Hastings during the season and the wires are kept busy soliciting and filling orders.

A little over two-thirds of the acreage in the principal Florida potato-shipping region was reported grown under contract in 1922. In such cases the dealers advanced \$15 to \$20 per acre to pay cost of growing the crop or indorse the growers' notes, charging 8 per cent. The dealers supplied seed and barrels and sometimes the fertilizer, although the tendency is to leave this to the fertilizer companies. These charges come out of the crop before the grower gets anything. Often the dealers advance enough more money at harvest time to pay for digging and loading the crop. In the event of a bad season the grower receives no returns from the sale of his crop, and if the agreement requires it, he has to give a note for the rest of the money and materials advanced. Practically all potato crops have paid enough to meet such loans when fertilizer had not been included in the advance. The dealer gets interest on the money, a profit on the seed stock and barrels, and 5 to 10 per cent commission for selling the crop. The growers who, either alone or as members of an association, do not depend on a dealer, are in a position to buy seed and supplies at lowest prices and to save for themselves a part of the interest and various profits. Moreover, these growers are in a more independent position at harvest time, since they are not bound to sell the crop to any one dealer.

More recently, the consignment method of selling, which depends for its net returns on the condition of the northern markets on arrival, has been changed partly to an "f. o. b. cash track" basis. This latter method insures prompt cash returns to shipper and grower, because the potatoes are sold in the car before shipment, the buyer paying the freight and all subsequent costs of handling.

Most of the buyers or operators in the Hastings section have business connections in the leading markets. Since New York City is the principal outlet for these potatoes, the New York jobbing price is the chief factor in determining the f. o. b. price at Hastings. The day's market price usually is fixed in the late morning or by noon. Price news and other information useful in governing sales and shipments is obtained from the local office of the Bureau of

Agricultural Economics, operated at Hastings each spring. Most sales are completed in the afternoon, and there is a rush of car loading every evening, sometimes continuing until late at night. Nearly all of the work is done by colored labor, and wagonload after wagonload of the barreled potatoes fill the driveways near the car doors. By midnight the day's work is done, and the long trains of loaded cars are on their way north.

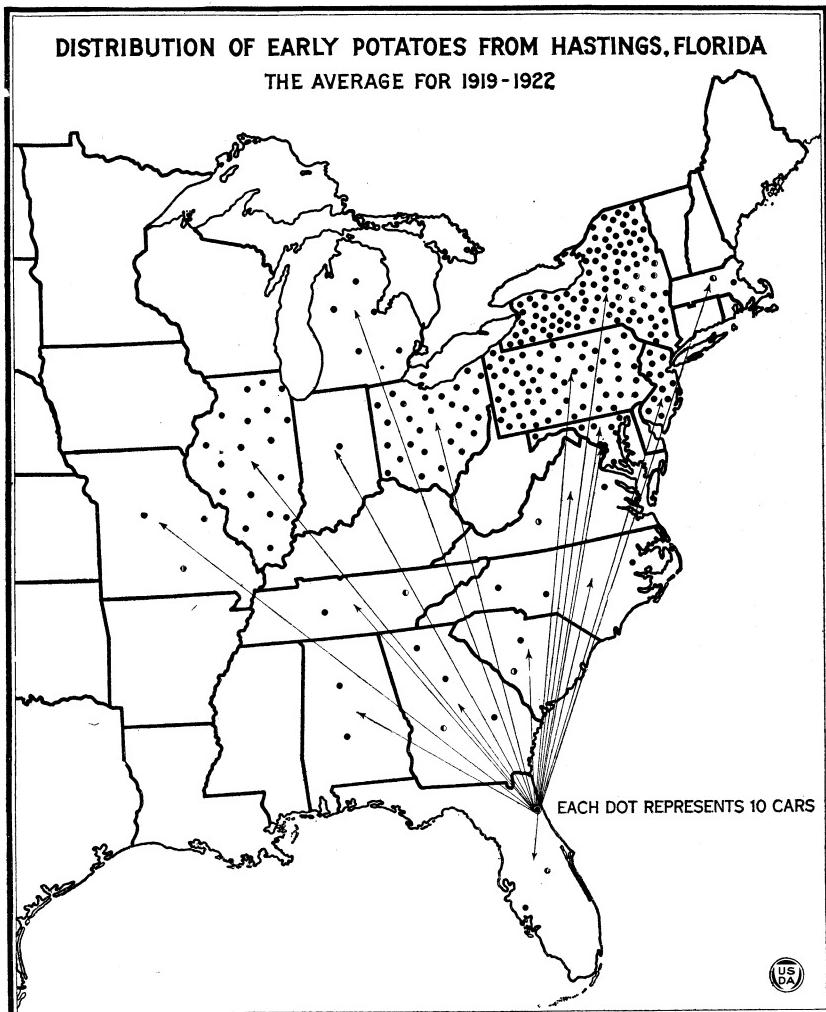


FIG. 13.—The majority of Florida potatoes go to northeastern city markets.

EASTERN VIRGINIA THE LARGEST EARLY SECTION.

The eastern shore of Virginia is one of the most compact of the early potato sections and, during June and July, is the most important potato-shipping territory in the United States. From the two counties, Northampton and Accomac, constituting the Virginia portion of the peninsula between the Chesapeake Bay and the

Atlantic Ocean, 12,000 to 15,000 carloads of white potatoes are shipped within 60 days. About 70 miles long and varying from 5 to 20 miles in width, this territory has only one railroad. Several important shipping points are reached by boats operated by the railroad company (see Fig. 14). Just north of this section, in the peninsular part of Maryland, is the potato-producing territory known as Eastern Shore of Maryland, with its market center at Pocomoke. South of the Eastern Shore of Virginia, across the mouth of the bay, is the Norfolk section of Virginia, which ships one-fourth to one-half as many potatoes as the Eastern Shore of Virginia.

The Irish Cobbler is the principal variety grown throughout these sections, most of the seed coming from Maine.

Since 1900, the center of activity for potato marketing on the Eastern Shore of Virginia has been at Onley, Accomack County, the headquarters of the Eastern Shore of Virginia Produce Exchange.



FIG. 14.—Norfolk boat shipments include much barreled stock.

This joint-stock company of growers, through its officers and sales force, handles not only most of the white potatoes shipped from that territory, but also large quantities of sweet potatoes and other farm products. Although the exchange has met some competition, its career has been one of marked success, and to-day it stands as a model for similar organizations in all parts of the country. A brief description of the operations of this exchange will explain the marketing methods prevailing to a large extent on the Eastern Shore of Virginia, and in several potato sections further south, where market operations are carried on by associations modeled after the older organization in Virginia.

The several thousand farmers who are stockholders in the exchange agree to market their products through this organization. The exchange acts as sales agent and, in addition, serves as purchasing agent for seed potatoes and other supplies needed by the growers. For convenience in marketing, the central exchange at Onley has

established 50 "locals." Each has a resident manager, an inspector, and a director, the latter representing the local group at the meetings of the central organization. The managers conduct the general business of the exchange in their respective districts. It is the duty of the local inspector to see that all potatoes are properly graded, packed, and labeled and to reject undesirable stock. Most of the grading is done by the farmers themselves, who sort the potatoes while picking them up.

In addition to this organization in the producing area, the exchange has market agents in a large number of important markets, chiefly in the New England and the Middle Atlantic States. These agents take the place of city brokers. They solicit and fill orders, handle the collection of accounts, etc. They keep the Onley office of the exchange in constant touch with market conditions and are a most valuable part of the organization.

Because of many years' experience, and aided greatly by the reports from its market agents who are at work before the shipping season actually opens, the exchange is able to advise potato growers when to load cars at the various shipping stations. In this way, the flow of potatoes from country to city points is carefully adjusted to the market to the advantage of all concerned. All shipments are pooled daily. Cars of the same grade loaded on one day return the same price to the grower whether or not the sale is completed on that day and regardless of actual variations in prices for individual cars. By "pooling" the day's loadings in this manner, the shippers are protected from loss through sudden changes in market price. The exchange operates on a commission basis not to exceed 5 per cent or not more than 20 cents per package. Nonmembers pay 3 per cent additional. All expenses of the exchange are paid from this fund and an annual dividend paid to stockholders. The remainder of the fund is divided between the "reserve fund" and the shippers, prorated according to the amount of commission assessed on the produce each has shipped through the exchange.

On the wall of one of the offices at the Onley headquarters is a large record board, with a space marked off for each of the 50 loading stations. The telephone rings soon after the opening of the office in the morning; it is part of the exchange's private telephone system. The local manager at Exmore, for example, is on the line. He reports a car or cars of potatoes loaded that morning and ready for shipping orders. He gives the number and initials of the car and the siding on which it stands. The contents are described, number of barrels, the grade and marks, and the name of the grower or growers who loaded the car. If the potatoes are No. 1's, the cloth tops bear the "Red Star" mark. If No. 2's are in the barrels the tops are not marked, unless the potatoes have been machine graded. In the latter case, they bear the "Gearwheel" brand. On the basis of these standard marks the exchange has built up a reputation for well-graded, reliably packed potatoes.

A card bearing this information is prepared, and as fast as the loaded cars are reported to the main office of the exchange, the descriptive cards are hung on a hook under the proper station names, thus telling at a glance the number of cars of potatoes available at any time and their location. A loaded car usually contains 200 cloth-top stave barrels and all are United States standard barrels.

The exchange has private wires to Philadelphia and the commercial telegraph companies have stations in the building of the exchange at Onley. As inquiries and orders come over the wires from its market agents in leading cities or from brokers or dealers at other points, the exchange fills the orders from the loaded cars on hand and transfers the cards to squares marked on the lower portion of the board, with a complete record of the sale written on each card.

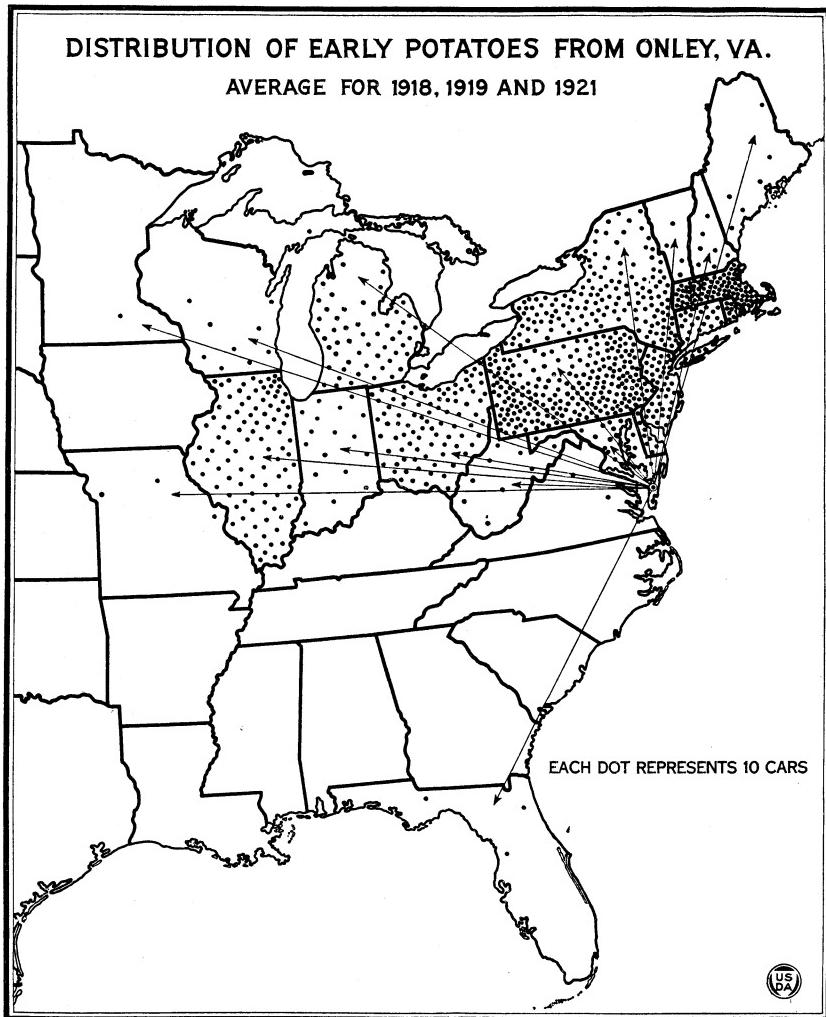


FIG. 15.—Eastern Shore ships to most of the northern markets.

The upper part of the wall board, therefore, shows what potatoes are ready for shipment and the lower part of the board shows all cars sold that day. This board helps one to measure the demand and movement. The cards become the basis of the records in the accountant's office, and the permanent file of cards presents a valuable history of the business.

Most of the sales are made on an "f. o. b. usual terms" basis, the stock being subject to inspection by the receiver before acceptance. This method is followed to the utmost extent practicable. Some of the ears are shipped to commission merchants whom the exchange has found to be trustworthy. Through the exchange, Eastern Shore of Virginia potatoes are distributed to practically all important markets east of the Mississippi River, as well as to certain Canadian centers and to Cuba.

A TEXAS SHIPPING SECTION.

While the eastern part of the United States is receiving new potatoes from Florida and the far western markets are obtaining new stock from the Los Angeles section, the midwestern cities look to Texas and adjoining States for their earliest supplies. The Eagle Lake section of Texas, in the heavy black-loam region not far west of Houston, usually ships 1,000 to 1,500 carloads during the last half of May and the early part of June. This territory covers part of Wharton and



FIG. 16.—Screen sizers have been largely replaced by sizing machines.

Colorado Counties, and about half of all potatoes from the districts originate at and around Eagle Lake station. The Bliss Triumph is the leading variety.

The soil in which potatoes are produced in this section presents one of the marketing problems. Although the rule is to sort out the larger, or No. 1, stock by means of either hand screens or machine graders, the heavy soil sticks to the potatoes. This is particularly true when harvesting is done after a rain. The quantity of soil clinging to the potatoes sometimes affects their market value and in nearly all shipments 2 to 4 per cent of weight must be allowed for dirt, which falls off before the shipments reach their destinations.

The principal container is the 2-bushel sack, which is generally filled and closed in the field and hauled in wagons or trucks directly to the cars. Most of the work is done by Mexican or negro labor. The contents of a sack usually weigh from 100 to 110 pounds. Ship-

ments from Eagle Lake and neighboring territory are usually made in stock cars, a kind of equipment that does not always afford the best protection from sun or rain. From Simonton station and adjacent points many shipments are forwarded in ventilated refrigerator cars, which afford better protection.

Chicago is the leading market for new potatoes from Texas, with Kansas City and St. Louis ranking next. Many cars are "rolled" for diversion, subject to a change of destination while en route. This enables the shipper to divert cars to those points where there is a greater demand.

The marketing of the crop is largely in the hands of a few commission firms, who not only serve as selling agents, but who lend money to growers before the crop is sold. Contracts are drawn up, whereby these houses furnish the seed, part of the sacks, and other things needed in producing and harvesting the crop. In return, the firms have the privilege of selling part (or all) of the potatoes on the usual commission basis or at a flat rate per ear. They have offices at Eagle



FIG. 17.—In the Southwest many potatoes are bagged in the field.

Lake during the shipping season and handle most of their business by wire, selling on an f. o. b. basis. Of course, there are some buyers on the ground who purchase many carlots, but the large operators control most of the sales.

SOUTHERN NEW JERSEY, A SECOND EARLY SECTION.

The southern New Jersey early-potato section is in the intermediate class with Kentucky and Kaw Valley, Kans., although a little later in maturity of the crop. It supplies chiefly the eastern markets in late summer and early fall, following the Eastern Shore crop closely and competing to some extent. The section in southern New Jersey, and the one in the northern part of the State, market their crops in close succession. As with other intermediate sections, the conditions vary according to the earliness and volume of the southern crop and of the main northern crop. Sometimes there is a favorable early outlet for the bulk of the crop. In other seasons the markets do not encourage

immediate shipment and much of the crop is held for gradual disposal. The area of distribution is wide, including the whole eastern half of the country, but New Jersey and neighboring States—Pennsylvania and New York—take most of the crop. Many early shipments go to New England cities and west to Chicago and St. Louis; later shipments go south as far as Florida and Louisiana.

Potatoes may be sold by the wagonload for cash to local dealers, who in turn sell loaded cars to cash buyers or on f. o. b. orders by telegraph from city dealers or through brokers. Cooperative exchanges are a feature in both northern and southern New Jersey. One of these in Monmouth County handles thousands of carloads yearly. Competition among buyers is often keen in southern New Jersey whenever dealers need stock to complete carloads or when extra choice lots of potatoes are offered. The stock is sacked at the car door or shipped in bulk, having been graded by the growers. It is sold on the 100-pound basis and put up mostly in 150-pound sacks. In northern New Jersey, machine graders are operated at the car door or in the warehouse at the car door or in the warehouse at the shipping station. Stock sold in the Philadelphia market is put up in five-eighths bushel baskets, and is usually handled by commission men. In the matter of carload consumption of the New Jersey crop, the leading markets in the order of their importance are New York City, Newark, Chicago, Jersey City, Philadelphia, and Boston.

KENTUCKY POTATOES.

The early-potato section of Kentucky, centering around Louisville, is an example of a district which takes full advantage of certain favorable conditions. The section is centrally located and freight charges are about equal to leading markets, north, south, and west. The crop matures in July and early August at a time when main-crop potatoes are not yet in the market and many southern sections are cleaning up the early crop. The shipper must watch crop maturity, shipments, and prices in other sections, and ship north, south, east, or west, according to the indicated demand. This diversified demand for the crop stimulates competition between local buyers who pay cash, handle the crop, and assume the risks of marketing. Shipment is mostly in 150-pound sacks, about 200 to the carload. Some of the stock is United States grade No. 1, other lots are only partly graded. Much of the grading is done on the farms with small field graders with two diagonal screens, the upper one having 1½-inch mesh and the lower 1½-inch mesh.

THE KAW VALLEY SECTION.

Another section favorably located to supply the markets during the season between the early and main crops is Kaw Valley, Kans. Together with Kentucky, it supplies a large part of the demand of middle-western and southwestern markets for a month or two in late summer. More or less competition comes from the far West and in some seasons from New Jersey or the Eastern Shore of Virginia and Maryland. Here, as in Kentucky, the outlet varies with the earliness or lateness of the season. If northern crops are late or southeastern crops early, Kaw Valley potatoes go far to the north

and east. Ordinarily, Kansas, Missouri, and Oklahoma are the principal consumers, although many cars are reshipped from receiving points in those States. Shippers watch the news bulletins published at Kansas City, reporting shipments and market information and change the route of the shipment accordingly. Heaviest unloads of Kaw Valley potatoes are at Chicago, Denver, Kansas City, St. Paul, Minneapolis, St. Louis, and Cincinnati.

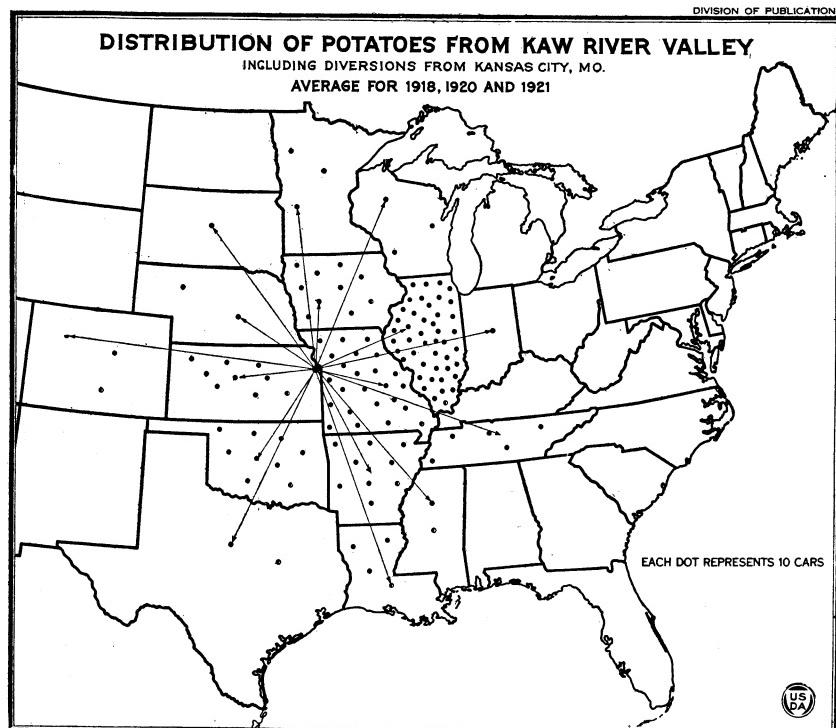


FIG. 18.—Kaw Valley potatoes reach South Central cities in July and August.

TO SUM IT UP.

Early potatoes are important as a cash crop. Yearly shipments are 40,000 carloads or more, worth some \$30,000,000, besides many more sold or used in small lots. Prompt, quick, careful handling is the keynote of the market problem.

Plan and study carefully, act promptly.

Plant somewhat according to the outlook for the general market supply likely to be on hand at the time of selling your crop. Study the latest crop estimates, shipments reports, and figures of stocks on hand. Light main crops nearly always mean a good opening for the early crop the next spring. Large main crops much above the five-year average of 373,000,000 bushels and heavy shipments suggest caution. Watch acreage and condition reports from earlier sections. If they plant heavily, later sections will be likely to do the same, which usually means heavy supplies. Bad weather conditions for

the earliest sections are favorable for heavier planting farther north. High prices of potatoes at time of planting is one of the best signs. Study past seasons until you have a clear idea of how things usually work out for the early crop. Nobody can hit right every season, but study is better than guesswork.

Watch the markets as you go along. Be sure your name is on the mailing list of the nearest market station and field station. Get the State and local crop reports. Don't be ruled by rumors. Study the best official reports as a habit, until it becomes possible to size up their practical meaning almost at a glance.

Local markets are important, especially in thickly populated northern early sections. There is keen demand for the first early local potatoes, and selling problems are easy. Army posts and naval stations in the vicinity are sometimes good customers.

For the bulk of the early southern crop the choice is between local cash dealers or associations, or shipment on consignment. If there is free competition, local sales are safest. Well-managed associations whose members borrow their money through banks are in a position of advantage. Producers of less than carloads must combine or sell to local buyers.

In some districts and in some seasons much stock is shipped to commission dealers. These men should be picked out carefully for good standing and square dealing.

A good dealer deserves a good shipper. When each learns that he can depend upon the other for fair and reasonable treatment, there is a chance for both to prosper. Know your dealer, then stick to him and make him a friend.

Efficient grading and inspection are great helps in making a solid market basis for the produce and in avoiding grounds for trouble with buyers.

Raise the standard early kinds, adopt the standard grades, and use the packages approved in the district.

Dig quickly at the right time, but oversee carefully to prevent sunburn, rot, cracks, and bruises. Grade well and put up full, even weight. Load with attention to security and ventilation.

Arrange with the dealer in advance and tell him what he needs to know as your agent.

Common mistakes include careless digging and handling, poor sorting and grading, dirty stock, loose, weak packing, loose loading, poor ventilation, failure to send notice of shipment to the dealer, mixed or nonstandard varieties, and unusual packages.

Try to learn something new from the way the crop is handled in other sections.

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